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EXAMINER	
ZHONG, CHAD	
ART UNIT	**PAPER NUMBER**
2152	

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/975,522	PEIFFER ET AL.	
	Examiner	Art Unit	
	Chad Zhong	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/8/05*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

FINAL ACTION

1. This action is responsive to communications: Amendment, filed on 08/11/2005. This action has been made final.

2. Claims 1-25 are presented for examination. In amendment B, filed on 08/11/2005:

Claims 1-3, 13, 18, 23, and 24 are currently amended.

Claims 4-12, 14-17, and 19-22 are previously presented.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-25 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-26 of copending Application No. 09-882375. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

09-975522 **Instant Application**	**09-882375** **Co-pending Application**
1. a computer networking device for use on a computer network connecting **a plurality of clients** with a server system, the clients and server system being configured to communicate using Hypertext Transfer Protocol (HTTP), the computer networking device comprising an HTTP multiplexor/demultiplexor configured to receive HTTP requests from a plurality of the clients and to distribute those requests over an individual server TCP connection to a corresponding socket on the server system.	1. a computer networking device for use on a computer network connecting a client and a server, the client and server client being configured to communicate using Hypertext Transfer Protocol (HTTP), the computer networking device comprising, an HTTP multiplexor/demultiplexor configured to receive HTTP requests from the client and to distribute those requests over a plurality of TCP connections to a plurality of corresponding sockets on the server.

Co-pending application anticipates all limitations in claim 1 of the instant application, the plurality of TCP connections anticipates an individual TCP connection to a server socket. As for plurality of clients

connecting with a server system, Susai et al. (hereinafter Susai), US 2002/0059428 discloses a plurality of clients connecting with a singular server farm for the advantages of data access and efficiency through load balancing. Thus it would have been obvious to implement the instant application in view of Co-pending application and Susai.

09-975522 Instant Application	**09-882375 Co-pending Application**
2. The computer networking device of claim 1, wherein the multiplexor/demultiplexor is further configured to receive HTTP responses from the server system over the individual server TCP connection and to route those responses to the clients via a **plurality of client** TCP connections.	2. The computer networking device of claim 1, wherein the multiplexor/demultiplexor is further configured to receive HTTP responses from the server over a plurality of TCP connections and to route those responses to the client via a single TCP connection.

Co-pending application anticipates all limitations of claim 2 of the instant application, as for plurality of clients connecting with a server system, Susai discloses a plurality of clients connecting with a singular server farm for the advantages of data access and efficiency through load balancing, and the corresponding results are routed back to the appropriate originating client, see for example, [0034-0035]. Thus it would have been obvious to implement the instant application in view of Co-pending application and Susai.

09-975522 Instant Application	**09-882375 Co-pending Application**
3. A computer networking method for processing HTTP requests, comprising: receiving HTTP requests from a **plurality of originating clients**; and routing the HTTP requests to an individual socket on a server system via an individual server TCP connection.	3. A computer networking method for processing HTTP requests, comprising: receiving a series of HTTP requests from an originating client; and routing the series of requests to a plurality of sockets on a server via a plurality of TCP connections.

Co-pending application anticipates all limitations of claim 3 of the instant application, as for plurality of clients connecting with a server system, Susai discloses a plurality of clients connecting with a singular server farm for the advantages of data access and efficiency through load balancing, and the corresponding results are routed back to the appropriate originating client. Thus it would have been obvious to implement the instant application in view of Co-pending application and Susai.

09-975522 Instant Application	09-882375 Co-pending Application
4. The method of claim 3, wherein the requests are routed based on a parameter selected from the group consisting of least-lengthy response time, last-accessed socket, fewest number of unfulfilled requests, type of requested data, and size of requested data.	4. The method of claim 3, wherein the requests are routed based on a parameter selected from the group consisting of least-lengthy response time, last accessed socket, fewest number of unfulfilled requests, type of requested data, and size of requested data.

Co-pending application anticipates all limitations of claim 4 of the instant application.

09-975522 Instant Application	09-882375 Co-pending Application
5. The method of claim 3, further comprising: receiving HTTP responses from the server system via the individual server TCP connection; and selectively routing the HTTP responses to the **plurality of originating clients**.	5. The method of claim 3, further comprising: receiving HTTP responses over a plurality of connections from the server; and routing the responses to the originating client.

Co-pending application anticipates all limitations of claim 5 of the instant application, the plurality of TCP connections anticipates an individual TCP connection to a server socket. As for plurality of clients

connecting with a server system, Susai discloses a plurality of clients connecting with a singular server farm for the advantages of data access and efficiency through load balancing, and the corresponding results are routed back to the appropriate originating client. Thus it would have been obvious to implement the instant application in view of Co-pending application and Susai.

09-975522 **Instant Application**	**09-882375** **Co-pending Application**
6. A computer networking method for data transfer between **plural originating clients**, a server system, and a networking device positioned on a computer network intermediate the clients and the server system, the method comprising: at the networking device, listening for HTTP requests from the originating clients; receiving HTTP requests from more than one of the originating clients; **multiplexing** the received requests for delivery to the server system via an individual server TCP connection; and sending the received requests via the individual server TCP connection to an optimal server socket.	6. A computer networking method for data transfer between an originating client, a server, and a networking device positioned intermediate the client and the server on a computer network, the method comprising: at the networking device, listening for a series of HTTP requests from the originating client; receiving the series of HTTP requests from the originating client; demultiplexing the series of HTTP requests into discrete HTTP requests; and sending each discrete HTTP request to an optimal server socket.

Co-pending application anticipates all limitations of claim 6 of the instant application, the plurality of TCP connections anticipates an individual TCP connection to a server socket. As for plurality of clients connecting with a server system, Susai discloses a plurality of clients connecting with a singular server farm for the advantages of data access and efficiency through load balancing, and the corresponding results are routed back to the appropriate originating client. Multiplexing is realized in Sridhar et al. US

6,266,701, hereinafter (Sridhar), wherein the plurality of requests are multiplexed together to reduce overhead thereby reducing latency (see for example, Col. 5, lines 15-20). Thus it would have been obvious to implement the instant application in view of Co-pending application, Susai, and Sridhar.

09-975522 Instant Application	09-882375 Co-pending Application
7. The method of claim 6, wherein receiving HTTP requests from the originating clients occurs via client TCP connections.	7. The method of claim 6, wherein receiving and sending occur via TCP connections.

Co-pending application anticipates all limitations of claim 7 of the instant application.

09-975522 Instant Application	09-882375 Co-pending Application
8. The method of claim 7, wherein the client and server TCP connections are persistent.	8. The method of claim 7, wherein the TCP connections are persistent.

Co-pending application anticipates all limitations of claim 8 of the instant application.

09-975522 Instant Application	09-882375 Co-pending Application
9. The method of claim 6, wherein sending the received requests to an optimal server socket includes determining an optimal server socket.	9. The method of claim 6, wherein sending each discrete HTTP request to an optimal server socket includes determining an optimal server socket.

Co-pending application anticipates all limitations of claim 9 of the instant application.

09-975522 **Instant Application**	09-882375 **Co-pending Application**
10. The method of claim 9, wherein determining an optimal server socket includes determining a server socket with a least-lengthy response time.	10. The method of claim 9, wherein determining an optimal server socket includes determining a server socket with a least-lengthy response time.

Co-pending application anticipates all limitations of claim 10 of the instant application.

09-975522 **Instant Application**	09-882375 **Co-pending Application**
11. The method of claim 9, wherein determining an optimal server socket includes determining a last-accessed server socket.	11. The method of claim 9, wherein determining an optimal server socket includes determining a last-accessed server socket.

Co-pending application anticipates all limitations of claim 11 of the instant application.

09-975522 **Instant Application**	09-882375 **Co-pending Application**
12. The method of claim 9, wherein determining an optimal server socket includes determining a server socket with the fewest number of unfulfilled requests.	12. The method of claim 9, wherein determining an optimal server socket includes determining a server socket with the fewest number of unfulfilled requests.

Co-pending application anticipates all limitations of claim 12 of the instant application.

09-975522 Instant Application	09-882375 Co-pending Application
13. The method of claim 6, further comprising listening for HTTP responses from the optimal server socket.	13. The method of claim 6, further comprising, listening for HTTP responses from a plurality of server sockets.

Co-pending application anticipates all limitations of claim 13 of the instant application, wherein the optimal server socket is one of a plurality of server sockets.

09-975522 Instant Application	09-882375 Co-pending Application
14. the method of claim 13, further comprising receiving HTTP responses from the optimal server socket.	14. The method of claim 13, further comprising, receiving the HTTP responses from the plurality of server sockets.

Co-pending application anticipates all limitations of claim 14 of the instant application, wherein the optimal server socket is one of a plurality of server sockets.

09-975522 Instant Application	09-882375 Co-pending Application
15. The method of claim 14, further comprising **demultiplexing** the received HTTP responses to permit selective routing and transmission of the received responses to corresponding originating clients.	15. The method of claim 14, further comprising, multiplexing the HTTP responses from the plurality of server sockets into a series of HTTP responses.

demultiplexing is realized in Sridhar wherein appropriate response is routed to the corresponding clients (see for example, Col. 6, lines 5-15 for the advantage of proper routing). Thus it would have been obvious to implement the instant application in view of Co-pending application and Sridhar.

09-975522 Instant Application	**09-882375 Co-pending Application**
16. The method of claim 15, further comprising sending the HTTP responses to the corresponding originating clients.	16. The method of claim 15, further comprising, sending the series of HTTP responses to the originating client.

Co-pending application anticipates all limitations of claim 16 of the instant application.

09-975522 Instant Application	**09-882375 Co-pending Application**
17. A computer networking method for data transfer between **plural originating clients**, a server system and an intermediate networking device, wherein the originating clients and the server system are configured to communicate over a computer network via the intermediate networking device, the method comprising: at the intermediate networking device, listening for HTTP requests from the originating clients; receiving HTTP requests from more than one of the originating clients; **multiplexing** the received requests; determining an optimal server socket;	17. A computer networking method for data transfer between an originating client, a server, and an intermediate networking device, wherein the originating client and the server are configured to communicate over a computer network via the intermediate networking device, the method comprising: at the intermediate networking device, listening for a series of HTTP requests from the originating client; receiving the series of HTTP requests from the originating client; demultiplexing the series of HTTP requests

sending the received requests as a multiplexed transmission to the optimal server socket via an individual TCP connection; listening for HTTP responses from the server system; receiving HTTP responses from the server system; **demultiplexing** the HTTP responses received from the server system to permit selective routing and transmission to corresponding originating clients; and sending the received HTTP responses to the corresponding originating clients.	into discrete HTTP requests; determining an optimal server socket for each discrete HTTP request; sending each discrete HTTP request to the optimal server socket for the request; listening for HTTP responses from a plurality of server sockets; receiving the HTTP responses from the plurality of server sockets; multiplexing the HTTP responses from the plurality of server sockets into a series of HTTP responses; and sending the series of HTTP responses to the originating client.

Co-pending application anticipates all limitations of claim 17 of the instant application, the plurality of TCP connections anticipates an individual TCP connection to a server socket. As for plurality of clients connecting with a server system, Susai discloses a plurality of clients connecting with a singular server farm for the advantages of data access and efficiency through load balancing, and the corresponding results are routed back to the appropriate originating client. Multiplexing and demultiplexing is realized in Sridhar, wherein the plurality of requests are multiplexed together to reduce overhead thereby reducing latency (see for example, Col. 5, lines 15-20), similarly the demultiplexing is realized as server send responses to corresponding clients. Thus it would have been obvious to implement the instant application in view of Co-pending application, Susai, and Sridhar.

09-975522 **Instant Application**	**09-882375** **Co-pending Application**
18. A computer networking device for use on a	18. A computer networking device for use on a

computer network to improve data transfer, the computer networking device being positioned intermediate **plural clients** and a server system, the clients and server system being configured to communicate via the computer network using HTTP communication protocol, the computer networking device comprising an HTTP multiplexor/demultiplexor configured to receive HTTP requests from the clients and to send the HTTP requests to a socket on the server system via **multiplexed** transmission, the computer networking device being further configured to receive HTTP responses from the server system and route the received HTTP responses to a corresponding one of the clients.	computer network to improve data transfer, positioned intermediate a client and a server, the client and server being configured to communicate via the computer network using HTTP communication protocol, the computer networking device comprising, an HTTP multiplexor/demultiplexor configured to receive HTTP requests from the client and to send the HTTP requests to a plurality of sockets on the server, and further configured to receive HTTP responses from the plurality of sockets on the server and to send the HTTP responses to the client.

Co-pending application anticipates all limitations of claim 18 of the instant application, the plurality of TCP connections anticipates an individual TCP connection to a server socket. As for plurality of clients connecting with a server system, Susai discloses a plurality of clients connecting with a singular server farm for the advantages of data access and efficiency through load balancing, and the corresponding results are routed back to the appropriate originating client. Multiplexing is realized in Sridhar, wherein the plurality of requests are multiplexed together to reduce overhead thereby reducing latency (see for example, Col. 5, lines 15-20), thus it would have been obvious to implement the instant application in view of Co-pending application, Susai, and Sridhar.

09-975522 **Instant Application**	09-882375 **Co-pending Application**
19. The device of claim 18, wherein the computer networking device establishes TCP connections with the **clients** and with the socket on the server system.	19. The device of claim 18, wherein the computer networking device establishes TCP connections with the client and the plurality of server sockets.

Co-pending application anticipates all limitations of claim 19 of the instant application, the plurality of TCP connections anticipates an individual TCP connection to a server socket. As for plurality of clients connecting with a server system, Susai discloses a plurality of clients connecting with a singular server farm for the advantages of data access and efficiency through load balancing, and the corresponding results are routed back to the appropriate originating client. Thus it would have been obvious to implement the instant application in view of Co-pending application, Susai.

09-975522 **Instant Application**	09-882375 **Co-pending Application**
20. The device of claim 19, wherein the TCP connections are persistent.	20. The device of claim 19, wherein the TCP connections are persistent.

Co-pending application anticipates all limitations of claim 20 of the instant application.

09-975522 **Instant Application**	09-882375 **Co-pending Application**
21. The device of claim 18, wherein the HTTP multiplexor/demultiplexor is further configured to determine an optimal server socket for receiving the HTTP requests.	21. The device of claim 18, wherein the HTTP multiplexor/demultiplexor is further configured to determine an optimal server socket for each HTTP request.

Co-pending application anticipates all limitations of claim 21 of the instant application.

09-975522 **Instant Application**	09-882375 **Co-pending Application**
22. A computer networking system for use with a computer network, the system comprising: a server system; **plural clients** configured to connect to the server system via the computer network; and a computer networking device positioned intermediate the server system and the clients on the computer network; wherein the computer networking device is configured to receive HTTP requests from the clients and to distribute those requests via **multiplexed** transmission over an individual TCP connection to a server socket on the server system.	23. A computer networking system for use with a computer network, the system comprising: a server; a client configured to connect to the server via the computer network; and a computer networking device positioned intermediate the server and the client on the computer network; wherein the computer networking device is configured to receive HTTP requests from the client and to distribute those requests over a plurality of TCP connections to a plurality of corresponding sockets on the server.

Co-pending application claim 23 anticipates all limitations of claim 22 of the instant application, the plurality of TCP connections anticipates an individual TCP connection to a server socket. As for plurality of clients connecting with a server system, Susai discloses a plurality of clients connecting with a singular server farm for the advantages of data access and efficiency through load balancing, and the corresponding results are routed back to the appropriate originating client. Multiplexing is realized in Sridhar, wherein the plurality of requests are multiplexed together to reduce overhead thereby reducing latency (see for example, Col. 5, lines 15-20), thus it would have been obvious to implement the instant application in view of Co-pending application, Susai, and Sridhar.

09-975522 **Instant Application**	09-882375 **Co-pending Application**
23. The computer networking system of claim 22, wherein the computer networking device is further configured to receive HTTP responses from the server system, **demultiplex** the responses, and route the demultiplexed responses to corresponding clients via a **plurality of client** TCP connections.	24. The computer networking system of claim 23, wherein the computer networking device is further configured to receive HTTP responses from the server over a plurality of TCP connections and to route those responses to the client via a single TCP connection.

Co-pending application claim 24 anticipates all limitations of claim 23 of the instant application, the plurality of TCP connections anticipates an individual TCP connection to a server socket. As for plurality of clients connecting with a server system, Susai discloses a plurality of clients connecting with a singular server farm for the advantages of data access and efficiency through load balancing, and the corresponding results are routed back to the appropriate originating client. Demultiplexing is realized as server send responses to corresponding clients. Thus it would have been obvious to implement the instant application in view of Co-pending application, Susai, and Sridhar.

09-975522 **Instant Application**	09-882375 **Co-pending Application**
24. A computer networking device for improving data transfer via a computer network, the device being configured to receive HTTP requests from a client, determine an optimal server socket for each HTTP request, and to send each HTTP	25. A computer networking device for improving data transfer via a computer network, the device being configured to receive HTTP requests from a client, to determine an optimal server socket for each HTTP requests,

request to the determined optimal server socket for the request.	and to send each HTTP request to the determined optimal server socket for the request.

Co-pending application claim 25 anticipates all limitations of claim 24 of the instant application.

09-975522 Instant Application	**09-882375 Co-pending Application**
25. The device of claim 24, wherein the device is further configured to receive an HTTP response from the optimal server socket and to send the HTTP response to the client.	26. The device of claim 25, wherein the device is further configured to receive an HTTP response from the optimal server socket and to send the HTTP response to the client.

Co-pending application claim 26 anticipates all limitations of claim 25 of the instant application.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-3, 5-7, 9, 11-19, 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Susai et al. (hereinafter Susai), US 2002/0059428, in view of Sridhar et al. (hereinafter Sridhar), US 6,266,701.

6. As per claim 1, Susai teaches a computer networking device (Fig 2, clients C1-C3) for use on a computer network connecting a plurality of clients with a server system (Fig 2, Server S1, S2, S3), the clients and server system being configured to communicate using Hypertext Transfer Protocol (HTTP)

([0038]), the computer networking device comprising an HTTP device configured to receive HTTP requests from the plurality of the clients (Fig 2, Interface Unit 202; pg 3, [0045], [0046], wherein there are at least two clients communicating with the same server S), multiplexor/demultiplexor device multiplexing plurality of requests and further sending out the multiplexed request to the designated server ([0042-0043]).

7. However, Susai does not explicitly teach to distribute those requests over an individual server TCP connection to a corresponding socket on the server system.

8. In a similar system, Sridhar teaches distribute those requests over an individual server TCP connection to a corresponding socket on the server system, see for example, Col. 6, lines 3-15; Col. 23, lines 45-55 for the advantages in reducing overhead and reducing latency, see for example, Col. 5, lines 15-20.

9. It would have been obvious to one of ordinary skill in this art at the time of invention was made to combine the teaching of Susai and Sridhar because they both dealing with a form of multiplexing requests. Furthermore, the teaching of Sridhar to allow multiplexing/demultiplexing of requests from a plurality of clients and to distribute those requests over an individual server TCP connection to a corresponding socket on the server system would improve the latency for Susai's system by multiplexing streams together to reduce overhead.

10. As per claim 2, Susai does not explicitly teach the computer networking device of claim 1, wherein the multiplexor/demultiplexor is further configured to receive multiplexed HTTP responses from the server system over the individual server TCP connection and to route those responses to the clients via a plurality of client TCP connections.

11. Sridhar teaches

wherein the multiplexor/demultiplexor is further configured to receive multiplexed HTTP responses from the server system over the individual server TCP connection and to route those responses to the clients via a plurality of client TCP connections (Col. 6, lines 5-15, for the advantages giving appropriate responses to the correct client; Col. 22, lines 15-20).

12. It would have been obvious to one of ordinary skill in this art at the time of invention was made to combine the teaching of Susai and Sridhar because they both dealing with a form of multiplexing requests. Furthermore, the teaching of Sridhar to allow wherein the multiplexor/demultiplexor is further configured to receive multiplexed HTTP responses from the server system over the individual server TCP connection and to route those responses to the clients via a plurality of client TCP connections would improve the latency for Susai's system by demultiplexing streams apart to identify the appropriate client to send to inorder to reduce bandwidth. Note, it is implicitly implied by the reference that a single stream takes up less bandwidth than a multiplexed stream going from server to the respective client.

13. As per claim 3, Susai teaches a computer networking method for processing HTTP requests, comprising:

receiving HTTP requests from a plurality of originating clients (Fig 2; pg 3, [0045-0046]); and

However, Susai does not explicitly teach:

routing the HTTP requests to an individual socket on a server system via a multiplexed TCP transmission using an individual server TCP connection.

In a similar system, Sridhar teaches the concept of routing HTTP requests to an individual socket on a server system via a multiplexed TCP transmission using an individual server TCP connection (Col. 6, lines 3-15; Col. 23, lines 45-55 for the advantages in reducing overhead and reducing latency, see for example, Col. 5, lines 15-20). It would have been obvious to the person of ordinary skill in the art at the time of the invention to combine teachings of Susai and Sridhar because multiplexing plurality of HTTP

requests to an individual socket on a server via a multiplexed TCP transmission using an individual server TCP connection as taught by Sridhar would enhance the capabilities of Susai by allowing for reduced overhead and latency on the communication network.

14. As per claim 5, Susai teaches the method of claim 3, further comprising:

receiving HTTP responses from the server system via the individual server TCP connection (Fig 2; pg 3, [0038], [0045])

15. Susai does not explicitly teach:

selectively routing the HTTP responses to the plurality of originating clients.

16. Sridhar teaches

selectively routing the HTTP responses to the plurality of originating clients (Col. 6, lines 5-15; Col. 15, lines 1-13; Col. 16, lines 4-5, wherein the demultiplexing entails the appropriate routing to the corresponding client destinations for the advantages of latency).

17. It would have been obvious to one of ordinary skill in this art at the time of invention was made to combine the teaching of Susai and Sridhar because they both dealing with a form of multiplexing requests. Furthermore, the teaching of Sridhar to allow

selectively routing the HTTP responses to the plurality of originating clients

would improve the latency for Susai's system by demultiplexing streams apart to identify the appropriate client to send to inorder to reduce bandwidth. Note, it is implicitly implied by the reference that a single stream takes up less bandwidth than a multiplexed stream going from server to the respective client.

18. As per claim 6, Susai teaches a computer networking method for data transfer between plural originating clients, a server system, and a networking device positioned on a computer network

intermediate the clients and the server system, the method comprising:

at the networking device, listening for HTTP requests from the originating clients (Fig 2, wherein the servers are listening to client requests; pg 3, [0038]);

receiving HTTP requests from more than one of the originating clients (Fig 2, wherein the servers are listening to client requests; pg 3, [0038]);

multiplexing the received requests for delivery to the server system via an individual server TCP connection ([0042-0043]).

19. Susai does not explicitly teach sending the received requests via the individual server TCP connection to an optimal server socket.

20. Sridhar teaches sending received requests via the individual server TCP connection to an optimal server socket, see for example, Col. 6, lines 3-15, for the advantages in reducing overhead and reducing latency(Col. 15, lines 1-15; Col. 20, lines 15-30; Col. 23, lines 1-10; wherein the determination of optimized socket occurs for example, by previously accessed socket is re-accessed, or based on utilization of remote server(s), wherein the utilization is determined when no response is obtained from said server(s)).

21. It would have been obvious to one of ordinary skill in this art at the time of invention was made to combine the teaching of Susai and Sridhar because they both dealing with a form of multiplexing. Furthermore, the teaching of Sridhar to allow sending the received requests via the individual server TCP connection to an optimal server socket would improve the efficiency for Susai's system by determining the most optimized socket to send the information to, realizing a form of load balancing.

22. As per claim 7, Susai teaches the method of claim 6, wherein receiving HTTP requests from the originating clients occurs via client TCP connections (pg 3, [0038]).

23. As per claim 9, claim 9 is rejected for the same reasons as rejection to claim 6 above, specifically, the determination of an optimized server socket is addressed above.

24. As per claim 11, Susai does not explicitly teach the method of claim 9, wherein determining an optimal server socket includes determining a last-accessed server socket.

25. Sridhar teaches

wherein determining an optimal server socket includes determining a last-accessed server socket (see for example, Col. 20, lines 15-30, wherein the last accessed connection can be used in order to save resources).

26. It would have been obvious to one of ordinary skill in this art at the time of invention was made to combine the teaching of Susai and Sridhar because they both dealing with a form of multiplexing. Furthermore, the teaching of Sridhar to allow

wherein determining an optimal server socket includes determining a last-accessed server socket

would improve the latency and communication costs for Susai's system by determining the most optimized socket to send the information to, realizing a form of load balancing.

27. As per claim 12, Susai does not explicitly teach the method of claim 9, wherein determining an optimal server socket includes determining a server socket with the fewest number of unfulfilled requests.

28. Sridhar teaches wherein determining an optimal server socket includes determining a server socket with the fewest number of unfulfilled requests (Col. 23, lines 5-10, wherein response determines if the server is busy or the utilization of the server, thus optimal server is selected and routing further proceeds based upon this limitation).

29. It would have been obvious to one of ordinary skill in this art at the time of invention was made

to combine the teaching of Susai and Sridhar at least for the same reasons and motivations as disclosed in claim 6 above.

30. As per claim 13, Susai does not explicitly teach the method of claim 6, further comprising listening for multiplexed HTTP responses from the optimal server socket.

31. Sridhar teaches listening for multiplexed HTTP responses from the optimal server socket (Col. 15, lines 45-50, lines 65-67; Col. 20, lines 16-30). It would have been obvious to one of ordinary skill in this art at the time of invention was made to combine the teaching of Susai and Sridhar at least for the same reasons and motivations as disclosed in claim 6 above.

32. As per claim 14, Susai does not explicitly teach the method of claim 13, further comprising receiving HTTP responses from the optimal server socket.

33. Sridhar teaches the method of claim 13, further comprising receiving HTTP responses from the optimal server socket (Col. 16, lines 1-2; Col. 20, lines 15-40). It would have been obvious to one of ordinary skill in this art at the time of invention was made to combine the teaching of Susai and Sridhar at least for the same reasons and motivations as disclosed in claim 6 above.

34. As per claim 15, Susai does not explicitly teach the method of claim 14, further comprising demultiplexing the received HTTP responses to permit selective routing and transmission of the received responses to corresponding originating clients.

35. Sridhar teaches

demultiplexing the received HTTP responses to permit selective routing and transmission of the received responses to corresponding originating clients (Col. 6, lines 5-15, for the advantages giving appropriate responses to the correct client).

36. It would have been obvious to one of ordinary skill in this art at the time of invention was made to combine the teaching of Susai and Sridhar because they both dealing with a form of multiplexing requests. Furthermore, the teaching of Sridhar to allow
demultiplexing the received HTTP responses to permit selective routing and transmission of the received responses to corresponding originating clients
would improve the latency for Susai's system by demultiplexing streams apart to identify the appropriate client to send to inorder to reduce bandwidth. Note, it is implicitly implied by the reference that a single stream takes up less bandwidth than a multiplexed stream going from server to the respective client.

37. As per claim 16, Susai teaches the method of claim 15, further comprising sending the HTTP responses to the corresponding originating clients (pg 3, [0038], [0042], [0045-0046]).

38. As per claim 17, Susai teaches a computer networking method for data transfer between plural originating clients, a server system and an intermediate networking device, wherein the originating clients and the server system are configured to communicate over a computer network via the intermediate networking device, the method comprising:

at the intermediate networking device, listening for HTTP requests from the originating clients (Fig 2, pg 3, [0038]; [0042-0043]);

the remainder of claim 17 is rejected for the same reasons as rejection to claims 1, 3, 6, 16 above.

39. As per claim 18, Susai teaches a computer networking device for use on a computer network to improve data transfer, the computer networking device being positioned intermediate plural clients and a server system, the clients and server system being configured to communicate via the computer network using HTTP communication protocol, the computer networking device comprising an HTTP
device configured to receive HTTP requests from the clients and to send the HTTP requests to a socket on

the server system via multiplexed transmission, the computer networking device being further configured to receive HTTP responses from the server system and route the received HTTP responses to a corresponding one of the clients (Fig 2; pg 2, [0036]; pg 3, [0038]; [0045-0046]),

an multiplexor/demultiplexor device configured to receive HTTP requests from the clients ([0042-0043]); the computer networking device being further configured to receive HTTP responses from the server system and route the received HTTP responses to a corresponding one of the clients ([0042-0043]).

40. However, Susai does not explicitly teach send the HTTP requests to a socket on the server system via multiplexed TCP transmission.

41. Sridhar teaches send the HTTP requests to a socket on the server system via multiplexed TCP transmission, see for example, Col. 6, lines 3-15 for the advantages in reducing overhead and reducing latency, see for example, Col. 5, lines 15-20.

42. It would have been obvious to one of ordinary skill in this art at the time of invention was made to combine the teaching of Susai and Sridhar because they both dealing with a form of multiplexing requests. Furthermore, the teaching of Sridhar to allow multiplexing/demultiplexing of requests from a plurality of clients and to distribute those requests over an individual server TCP connection to a corresponding socket on the server system would improve the latency for Susai's system by multiplexing streams together to reduce overhead.

43. As per claim 19, Susai teaches the device of claim 18, wherein the computer networking device establishes TCP connections with the clients and with the socket on the server system (pg 3, [0038]).

44. As per claim 22, Susai teaches a computer networking system for use with a computer network, the system comprising:

a server system (Fig 2, S1-S3);

plural clients configured to connect to the server system via the computer network (Fig 2, C1-C3); and

a computer networking device positioned intermediate the server system and the clients on the computer network (Fig 2, item 202);

wherein the computer networking device is configured to receive HTTP requests from the clients ([0042-0043]);

45. Susai does not explicitly teach to distribute those requests via multiplexed transmission over an individual TCP connection to a server socket on the server system.

46. Sridhar teaches distribute those requests via multiplexed transmission over an individual TCP connection to a server socket on the server system, see for example, Col. 6, lines 3-15, for the advantages in reducing overhead and reducing latency, see for example, Col. 5, lines 15-20.

47. It would have been obvious to one of ordinary skill in this art at the time of invention was made to combine the teaching of Susai and Sridhar because they both dealing with a form of multiplexing requests. Furthermore, the teaching of Sridhar to allow distribute those requests via multiplexed transmission over an individual TCP connection to a server socket on the server system would improve the latency for Susai's system by multiplexing streams together to reduce overhead.

48. As per claim 23, claim 23 is rejected for the same reasons as rejection to claim 2 above.

49. As per claims 21, 24, claims 21, 24 are rejected for the same reasons as rejection to claim 6 above.

50. As per claim 25, claim 25 is rejected for the same reasons as rejection to claim 6 and 14 above.

51. Claims 4, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable by Susai et al. (hereinafter Susai), US 2002/0059428, in view of Sridhar et al. (hereinafter Sridhar), US 6,266,701, further in view of Bommareddy et al. (hereinafter Bommareddy), US 6,779,039

52. As per claim 4, Susai teaches the method of claim 3, wherein the requests are routed based on a parameter selected from the group consisting of last-accessed socket, type of requested data, and size of requested data (see for example, pg 3, [0041], wherein NAT covers last accessed port, type of data and size of data).

53. Susai does not explicitly teach:

least-lengthy response time, fewest number of unfulfilled requests,

54. Sridhar teaches fewest number of unfulfilled requests, see for example, Col. 20, lines 15-30, Col. 23, lines 5-10.

55. It would have been obvious to one of ordinary skill in this art at the time of invention was made to combine the teaching of Susai and Sridhar because they both dealing with multiplexing of requests.

Furthermore, the teaching of Sridhar to allow

fewest number of unfulfilled requests

would improve the efficiency for Susai's system by determining the status of the communication between client and server is still active while performing load balancing optimizations.

However, Susai and Sridhar does not explicitly teach least-lengthy response time.

In a similar system, Bommareddy teaches least-lengthy response time (Col. 17, lines 40-60)

56. It would have been obvious to one of ordinary skill in this art at the time of invention was made to combine the teaching of Susai, Sridhar and Bommareddy because they all deal with optimization of

sockets. Furthermore, the teaching of Bommareddy to allow for least-lengthy response time would provide for additional routing functionality for Susai and Sridhar's system by improving the load balancing abilities of the network.

57. As per claim 10, claim 10 is rejected for the same reasons as rejection to claim 4 above.

58. Claims 8, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Susai et al. (hereinafter Sridhar), US 2002/0059428, in view of Sridhar et al. (hereinafter Sridhar), US 6,779,037, further in view of RFC 2616, Fielding et al. (hereinafter Fielding), 1999.

59. As per claim 8, 20, Susai does not explicitly teach wherein the client and server TCP connections are persistent.

In a similar system, Fielding teaches the TCP connection can be persistent oriented in order to reduce network congestion by reducing the number of packets caused by TCP opens, and by allowing TCP sufficient time to determine the congestion state of the network (8 Connections, "Persistent HTTP connections have a number of advantages:"). It would have been obvious to the person of ordinary skill in the art at the time of the invention to combine teachings of Susai, Sridhar, and Fielding because utilizing persistent TCP connection would enhance the capabilities of Susai and Sridhar to allow for reduced network congestion.

Response to Arguments

60. Applicant's remarks filed 08/11/2005 have been considered but are found not persuasive.

61. In the remark, the applicant argued in substance that Sridhar does not describe multiplexing a plurality of requests together over an individual server TCP connection to a corresponding socket on the server.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., multiplexing plurality of requests together) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

62. In the remark, the applicant argued in substance that Sridhar does not describe multiplexing a plurality of requests over an individual server TCP connection to a corresponding socket on the server.

In response to Applicant's arguments, Sridhar teaches the claimed limitation. Specifically, It is noted that although Applicant's specification discloses TCP environment, the specification fails to disclose which version of TCP he/she is utilizing. Therefore, 'TCP' will be interpreted as a transport level protocol, i.e. a protocol that corresponds to the transport layer.

Section of MPEP 2111.01[R-2] is replicated as follows:

> "During examination the USPTO must give claims their broadest reasonable interpretation.).< This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) (discussed below)**>; Chef America, Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1372, 69 USPQ2d 1857 (Fed. Cir. 2004) (Ordinary, simple English words whose meaning is clear and unquestionable, absent any indication that their use in a particular context changes their meaning, are construed to mean exactly what they say."

In light of this, XTP as disclosed within Sridhar is a modified version of TCP (Col. 9, lines 30-35). Although structurally different, both TCP and XTP operate within the transport layer thus making them analogous. Additionally, Susai reference discloses multiplexing in a generic sense, refer to [0042-0043], by modifying the packet fields of the incoming and out going flows in a TCP protocol level, the incoming and outgoing flows are being directed towards a single input and output port respectively. Further distribution of requests over an individual server TCP connection to a corresponding socket on the server system is taught in Sridhar's system, see Col. 6, lines 3-15; Col. 23, lines 45-55 for advantages in

reduction of network overhead.

63. In the remark, Applicant requested the location of "determining an optimal server socket includes determining a last-accessed server socket" within Sridhar.

In response to Applicant's request, the history of socket access is stored within a access table, so that future associations with the same socket can be easily retrieved from said table, see Col. 22, lines 1-15 for example.

64. In the remark, Applicant argued in substance that Sridhar does not teach "determining a server socket with the fewest number of unfulfilled requests".

In response to Applicant's arguments, unfulfilled requests are idle sockets with respect to the status probes send to the communication server by a client computer. In other words, if there is no response to the probes, then this idle socket connection is considered herein as the fewest amount 'unfulfilled requests', as oppose to plurality of responses from the server would mean there are many 'unfulfilled requests' indicating the socket is busy. Thus, the least busy socket is the most efficient socket based on this determination. The client, after this determination process goes on and establishes TCP connection with the optimal socket.

65. In the remark, Applicant argued in substance that Bommareddy relates to controlling traffic flow across servers, not sockets and Bommareddy does not describe selection of a socket based on a least lengthy response time.

In response to Applicant's assertions, Bommareddy teaches selection of a TCP port corresponding to a particular server on the network based upon results of at least one network test. Among the methods of test, round-robin, least used flow, and weighted methods were used. In particular, in the least used flow method, network flow controller selects the server that has been forwarded the least amount of traffic

from clients, realizing a load balancer. It should be noted that server ports/sockets are being probed by these tests, the optimum server port/socket would have least amount of client traffic going across it. The probed least response time will be used as optimum server selection criteria. (Col. 17, lines 15-25, lines 40-56).

66. In the response Applicant traversed the official notice rejection pertaining to persistent TCP connection. In response to Applicant's arguments, new cited reference explaining the advantages of persistent TCP connection is disclosed herein.

Conclusion

67. **THIS ACTION IS MADE FINAL.** Applicant is reined of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents and publications are cited to further show the state of the art with respect to "HTTP MULTIPLEXOR/DEMULTIPLEXOR".

i. US 6779017 Lamberton et al.

ii. US 6266707 Boden et al.

iii. US 6754621 Cunningham et al.

iv. US 5826261 Spencer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad Zhong whose telephone number is (571)272-3946. The examiner can normally be reached on M-F 7:15 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BURGESS, GLENTON B can be reached on (571)272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CZ
August 22, 2005

N. El Hady